values for wheel unloading and roll angles or accelerations that were observed during testing; and

(3) For vehicle types not subject to part 238 or part 229 of this chapter, procedures or standards in effect that relate to the maintenance of all safety-critical components of the suspension system(s) for the particular vehicle type. Safety-critical components of the suspension system are those that impact or have significant influence on the roll of the carbody and the distribution of weight on the wheels.

(f) In approving the request made pursuant to paragraph (e) of this section, FRA may impose conditions necessary for safely operating at the higher curving speeds. Upon FRA approval of the request, the track owner or railroad shall notify FRA in writing no less than 30 calendar days prior to the proposed implementation of the approved higher curving speeds allowed under the formula in paragraph (b) of this section. The notification shall contain, at a minimum, identification of the track segment(s) on which the higher curving speeds are to be implemented.

(g) The documents required by this section must be provided to FRA by:

(1) The track owner; or

(2) A railroad that provides service with the same vehicle type over trackage of one or more track owner(s), with the written consent of each affected track owner.

(h) (1) Vehicle types permitted by FRA to operate at cant deficiencies, E_u, greater than 3 inches but not more than 5 inches shall be considered qualified under this section to operate at those permitted cant deficiencies for any Class 6 track segment. The track owner or railroad shall notify FRA in writing no less than 30 calendar days prior to the proposed implementation of such curving speeds in accordance with paragraph (f) of this section.

(2) Vehicle types permitted by FRA to operate at cant deficiencies, E_u, greater than 5 inches on Class 6 track, or greater than 3 inches on Class 7 through 9 track, shall be considered qualified under this section to operate at those permitted cant deficiencies only for the previously operated or identified track segments(s). Operation of these vehicle types at such cant deficiencies and track class on any other track segment is permitted only in accordance with the qualification requirements in this subpart.

(i) As used in this section and in §§ 213.333 and 213.345—

(1) *Vehicle* means a locomotive, as defined in § 229.5 of this chapter; a freight car, as defined in § 215.5 of this chapter; a passenger car, as defined in § 238.5 of this chapter; and any rail rolling equipment used in a train with either a freight car or a passenger car.

(2) *Vehicle type* means like vehicles with variations in their physical properties, such as suspension, mass, interior arrangements, and dimensions that do not result in significant changes to their dynamic characteristics.

[78 FR 16105, Mar. 13, 2013]

§ 213.331 Track surface.

(a) For a single deviation in track surface, each track owner shall maintain the surface of its track within the limits prescribed in the following table:

Track surface (inches)	Class of track			
	6	7	8	9
The deviation from uniform [1] profile on either rail at the mid-ordinate of a 31-foot chord may not be more than	1	1	¾	½
The deviation from uniform profile on either rail at the mid-ordinate of a 62-foot chord may not be more than	1	1	1	¾
Except as provided in paragraph (b) of this section, the deviation from uniform profile on either rail at the mid-ordinate of a 124-foot chord may not be more than	1¾	1½	1¼	1
The deviation from zero crosslevel at any point on tangent track may not be more than [2]	1	1	1	1
Reverse elevation on curves may not be more than	½	½	½	½
The difference in crosslevel between any two points less than 62 feet apart may not be more than [3]	1½	1½	1¼	1
On curved track, the difference in crosslevel between any two points less than 10 feet apart (short warp) may not be more than	1¼	1⅛	1	¾

[1] Uniformity for profile is established by placing the midpoint of the specified chord at the point of maximum measurement.

[2] If physical conditions do not permit a spiral long enough to accommodate the minimum length of runoff, part of the runoff may be on tangent track.

[3] However, to control harmonics on jointed track with staggered joints, the crosslevel differences shall not exceed 1 inch in all of six consecutive pairs of joints, as created by seven low joints. Track with joints staggered less than 10 feet apart shall not be considered as having staggered joints. Joints within the seven low joints outside of the regular joint spacing shall not be considered as joints for purposes of this footnote.

(b) For operations at a qualified cant deficiency, E_u, of more than 5 inches, a single deviation in track surface shall be within the limits prescribed in the following table:

Track surface (inches)	Class of track			
	6	7	8	9
The difference in crosslevel between any two points less than 10 feet apart (short warp) may not be more than	1¼	1	1[1]	¾
The deviation from uniform profile on either rail at the mid-ordinate of a 124-foot chord may not be more than	1½	1¼	1¼	1

[1] For curves with a qualified cant deficiency, E_u, of more than 7 inches, the difference in crosslevel between any two points less than 10 feet apart (short warp) may not be more than three-quarters of an inch.

(c) For three or more non-overlapping deviations in track surface occurring within a distance equal to five times the specified chord length, each of which exceeds the limits in the following table, each track owner shall maintain the surface of the track within the limits prescribed for each deviation:

Track surface (inches)	Class of track			
	6	7	8	9
The deviation from uniform profile on either rail at the mid-ordinate of a 31-foot chord may not be more than	¾	¾	½	⅜
The deviation from uniform profile on either rail at the mid-ordinate of a 62-foot chord may not be more than	¾	¾	¾	½
The deviation from uniform profile on either rail at the mid-ordinate of a 124-foot chord may not be more than	1¼	1	⅞	⅝

[78 FR 16106, Mar. 13, 2013]

§ 213.332 Combined track alinement and surface deviations.

(a) This section applies to any curved track where operations are conducted at a qualified cant deficiency, E_u, greater than 5 inches, and to all Class 9 track, either curved or tangent.

(b) For the conditions defined in paragraph (a) of this section, the combination of alinement and surface deviations for the same chord length on the outside rail in a curve and on any of the two rails of a tangent section, as measured by a TGMS, shall comply with the following formula:

$$\frac{3}{4} \times \left| \frac{A_m}{A_L} + \frac{S_m}{S_L} \right| \leq 1$$

Where—

A_m = measured alinement deviation from uniformity (outward is positive, inward is negative).

A_L = allowable alinement limit as per § 213.327(c) (always positive) for the class of track.

S_m = measured profile deviation from uniformity (down is positive, up is negative).

S_L = allowable profile limit as per § 213.331(a) and § 213.331(b) (always positive) for the class of track.